



# UNITED STATES PATENT AND TRADEMARK OFFICE

Ech

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/975,089	10/09/2001	J. J. Garcia-Luna-Aceves	UC2000-351-2	7690

7590 06/28/2005

John P. O'Banion  
O'BANION & RITCHEY LLP  
Suite 1550  
400 Capitol Mall  
Sacramento, CA 95814

EXAMINER
----------

KHOO, FOONG LIN

ART UNIT	PAPER NUMBER
----------	--------------

2664

DATE MAILED: 06/28/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	09/975,089	GARCIA-LUNA-ACEVES ET AL.	
	<b>Examiner</b>	<b>Art Unit</b>	
	F. Lin Khoo	2664	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 10 October 2000.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-49 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 27-49 is/are allowed.
- 6) ☒ Claim(s) 1-9 and 14-26 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All   b) ☐ Some \*   c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                        | 4) <input type="checkbox"/> Interview Summary (PTO-413)                     |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)               | Paper No(s)/Mail Date. _____  |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date <u>11 Jan 2002</u>   | 6) <input type="checkbox"/> Other: _____                                    |

## **DETAILED ACTION**

### ***Specification***

1. The lengthy specification has not been checked to the extent necessary to determine the presence of all possible minor errors. Applicant's cooperation is requested in correcting any errors of which applicant may become aware in the specification.

### ***Claim Objections***

2. Claims 10, 23, 27 and 39 are objected to because of the following informalities: In the limitation "comparing the timestamp of a route", the applicant is not clearly stating which timestamps in the claims the applicant is referring to in comparing the timestamp of a route to current time at the router. The recitation of "time stamping a route when said route is entered into said routing table; time stamping a route when a data packet for the destination is received by said router;" is suggested to be changed to the following "time stamping a route when said route is entered into said routing table and when a data packet for the destination is received by said router;". Appropriate correction is required.

### ***Claim Rejections - 35 USC § 112***

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Art Unit: 2664

4. Claims 23 and 24 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 23 recites the limitation "said step of deleting" in line 1. There is insufficient antecedent basis for this limitation in the claim.

Claim 24 recites the limitation "said step of maintaining" in line 1. There is insufficient antecedent basis for this limitation in the claim.

***Claim Rejections - 35 USC § 102***

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

6. Claims 1 and 14 are rejected under 35 U.S.C. 102(b) as being anticipated by Moore et al. (U.S. Patent No. 5,530,963).

Regarding claim 1, Moore discloses a method for on-demand routing of data packets in a wired or wireless data network (col 2, lines 50-54), comprising: creating a routing table entry in a router from a source to a destination when router receive a data packet for said destination (col 2, lines 64-67 and col 3 lines 1-2); and maintaining routing table entry until router no longer receives data traffic from source (col 3, lines 2- 6).

Regarding claim 14, Moore discloses a method for on-demand routing of data packets in a wired or wireless data network (col 2, lines 50-54), comprising:

Art Unit: 2664

creating a routing table entry in a router from a source to a destination when router receive a data packet for said destination (col 2, lines 64-67 and col 3 lines 1-2); and deleting routing table entry until router no longer receives data traffic from source (col 3, lines 2- 6).

***Claim Rejections - 35 USC § 103***

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. Claims 2-9, 15-22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Zaumen et al. (U.S. Patent No. 5,881,243) in view of Moore et al (U.S. Patent No. 5,530,963).

Regarding claims 2 and 15, Zaumen et al. discloses starting a diffusion search if router receives a data packet for routing to a destination for which it has no routing table entry (col16, lines 1-3). The query reporting "infinity" is the condition which initiates the start of the diffusing search when there is no destination entry in the routing table.

Regarding claims 3 and 16, Zaumen et al. discloses a diffusing search which propagates out on the network from the source on a hop-by-hop basis until it reaches a router that has a routing table entry for the destination (col 12, lines 50- 54).

Regarding claims 4 and 17, Zaumen et al. discloses a router that has a routing table entry for destination and replies with distance from source to router (col 8, lines 3-7).

Regarding claims 5 and 18, Zaumen et al. discloses at the end of diffusing search, source either obtains a finite distance to destination or all neighboring nodes determine that destination is unreachable (col 13, lines 14 –32). Zaumen et al. refers to a link-up event message sent indicating that the links to neighboring nodes are available and a link-down event message sent indicating that the links to neighboring nodes are not available.

Regarding claims 6 and 19, Zaumen et al. discloses wherein said router has a routing table (col 18 lines 1-4, snapshot event table shown spanning cols 17 and 18) and a distance table (snapshot event table shown spanning cols 17 and 18 indicates distance as an entry); and wherein at the start of diffusing search router adds the destination (snapshot event table shown spanning cols 17 and 18 indicates destination) to its routing table and distance table, becomes active for the destination, and sends a query to a neighboring router (col 6, lines 37-41). Zaumen et al. indicates that a node is said to be active when it is participating in the diffusing computation.

Regarding claims 7 and 20, Zaumen et al. discloses a method wherein neighboring router reports a distance in response to query (col 5, lines 60-62).

Regarding claims 8 and 21, Zaumen et al. discloses wherein a neighboring router has a routing table and a distance table (col 7, lines 65-67 and col 8, lines 1-7).; and wherein a neighboring router that receives a query for a destination but has no routing

Art Unit: 2664

table entry for the destination adds the destination to its routing table and distance table, becomes active for the destination, and forwards the query to a neighboring router (col 13, lines 14-27 which discusses a link-up event).

Regarding claims 9 and 22, Zaumen et al. discloses a method wherein a reply to a query can make an active router passive (col 6, lines 64-65). Zaumen et al. states that a node cannot become passive (remains active) when it has not receive the last reply to a query.

With respect to claims 2-9 and 15-22, Zaumen et al. does not disclose maintaining the routing table entry until router no longer receives data traffic from source. Moore et al. discloses that all routing table entries which identify the segment location for a mobile workstation are automatically deleted in response to a termination of communications between the mobile workstation and the radio frequency transceiver. It would have been obvious to a person of ordinary skill in the art to incorporate the teachings of Moore et al. to the system of Zaumen et al. which would not require the maintenance of routing path information at each router (col 3, lines 10-13) thereby reducing overhead and making it more efficient as an on-demand routing protocol.

***Allowable Subject Matter.***

9. Claims 23 and 24 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

Claims 10-13 and 23-26 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Claims 27-38 and 39-49 are allowed.

The following is a statement of reasons for the indication of allowable subject matter for claims 10-13, 23-26, 27-38 and 39-49: The prior art does not teach in combination the steps of (a) time stamping a route when route is entered into routing table and when a data packet for the destination is received by router (b) comparing the timestamp of a route to current time at the router (c) removing route from the routing table if the difference between time stamps exceeds a threshold.

### ***Conclusion***

10. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

U.S. Patent No. 5,488,608 to Flammer, III relates generally to a method for routing data packets through a packet communication network and more specifically to a method for routing data packets in a network where the best paths between nodes are stored in a routing table generated at each node.

U.S. Patent No. 5,608,721 to Natarajan et al. teaches a method for implementing diversified routing in a communications network and distributing communication routes between origination and destination nodes among physically distinct shortest paths responsive to changing network conditions and a variety of user inputs.



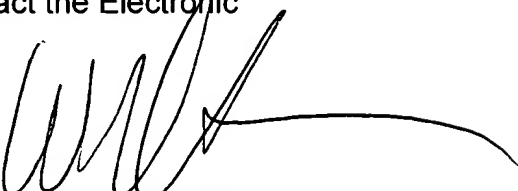
U.S. Patent No. 6,535,498 to Larsson et al. teaches a reactive ad-hoc routing protocol to determine whether more optimal routes exist between the source node and the destination node upon the occurrence of a predetermined event.

The three prior arts cited, however, do not teach the applicant's invention of routing data based on a diffusing computation method that provides a solution to the term "search-to-infinity problem" .

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to F. Lin Khoo whose telephone number is 571-272-5508. The examiner can normally be reached on flex time.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wellington Chin can be reached on 571-272-3134. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



WELLINGTON CHIN  
SENIOR PATENT EXAMINER